

In the Claims

Claims 1-13 (Canceled).

Claim 14 (New): A method of making pentafluorosulfanyl substituted aliphatic or aromatic compounds comprising contacting a solution comprising a solvent, SF_5Cl in hexane, and one or more aliphatic or aromatic alkene, alkyne, cyclohexene, or cyclohexadiene compounds with an initiator selected from the group consisting of alkylboranes, dialkylboranes, trialkylboranes, 9-borabicyclo[3.3.1] nonane, and mixtures thereof to produce a reaction product comprising pentafluorosulfanyl substituted compound.

Claim 15 (New): The method according to claim 14, wherein said aliphatic or aromatic alkene, alkyne, cyclohexene, or cyclohexadiene compounds are substituted.

Claim 16 (New): The method according to claim 14, wherein said compound is cyclohexene, substituted cyclohexene, cyclohexadiene, or substituted cyclohexadiene and wherein said reaction product is a pentafluorosulfanyl substituted adduct.

Claim 17 (New): The method according to claim 16, further comprising the step of eliminating or oxidizing said pentafluorosulfanyl substituted adduct to form a pentafluorosulfanyl substituted aromatic compound.

Claim 18 (New): The method according to claim 14, further comprising the step of hydrolyzing said pentafluorosulfanyl substituted compound.

5

Docket No. UF-332CXC1
Serial No 10/627,831

Claim 19 (New): The method according to claim 18, further comprising the step of drying said hydrolyzed pentafluorosulfanyl substituted compound.

Claim 20 (New): The method according to claim 19, wherein said drying step is performed over a desiccant.

Claim 21 (New): The method according to claim 14, further comprising the step of purifying said pentafluorosulfanyl substituted compound.

Claim 22 (New): The method according to claim 17, further comprising the step of purifying said pentafluorosulfanyl substituted aromatic compound.

Claim 23 (New): The method according to claim 18, further comprising the step of purifying said hydrolyzed pentafluorosulfanyl substituted compound.

Claim 24 (New): The method according to claim 19, further comprising the step of purifying said dried and hydrolyzed pentafluorosulfanyl substituted compound.

Claim 25 (New): The method according to claim 14, wherein said solution comprises: solvent, SF_5Cl , and initiator and wherein said solution is contacted with one or more compounds; or said solution comprises: solvent and SF_5Cl and wherein said solution is contacted with one or more compounds and said initiator.

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